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Software Requirements Engineering
วิศวกรรมความต้องการซอฟต์แวร์

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Chapter 9

Requirements Analysis and Prioritization

การวิเคราะห์ความต้องการและการจัดลำดับความสำคัญ

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Outline

- Introduction to Requirements Analysis
- Why Requirements Analysis is Crucial?
- Requirements Prioritization
- Practical Prioritization Process
- Common Challenges in Requirements Analysis
- Strategies to Overcome Challenges
- Best Practices for Requirements Analysis and Prioritization

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Objectives

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- Understand the concept of Requirements Analysis
- Explain the importance of Requirements Analysis
- Understand the concepts and techniques of Requirements Prioritization
- Practice the prioritization process in a practical setting
- Identify common challenges in Requirements Analysis
- Propose solutions to overcome challenges in Requirements Analysis
- Learn best practices for Requirements Analysis and Prioritization

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Introduction to Requirements Analysis

The process of gathering and analyzing stakeholder needs and expectations for a system or project.

Importance:

It ensures that the system meets users' needs and aligns with business goals.

Key Steps:
1. Elicitation
2. Documentation
3. Validation

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Why Requirements Analysis is Crucial?

1. Reduces Risks: Helps avoid costly mistakes during later stages.

2. Clear Communication: Ensures all stakeholders are aligned with the project goals.

3. Better Design: Leads to a system that meets real needs and requirements.

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Requirements Prioritization

   The process of determining the importance and urgency of requirements to focus efforts on the most critical aspects.

Why It's Important:
1. Limited resources
2. Changing business needs
3. Complex systems with many requirements

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Challenges in Requirements Prioritization

1. Conflicting Stakeholder Needs: Different stakeholders may have conflicting priorities.

2. Limited Resources: Time, budget, and team capacity may limit the scope of implementation.

3. Ambiguous Requirements: Some requirements may be unclear or not well-defined.

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Practical Prioritization Process

1. Gather Requirements: Collect all the requirements from stakeholders.
2. Categorize Requirements: Classify them into must-have, should-have, could-have, and won't-have (MoSCoW method).
3. Prioritize Requirements: Rank requirements based on their impact and urgency.
4. Review and Adjust: Reevaluate priorities periodically as conditions change.

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Requirements Prioritization

Why Prioritization Matters
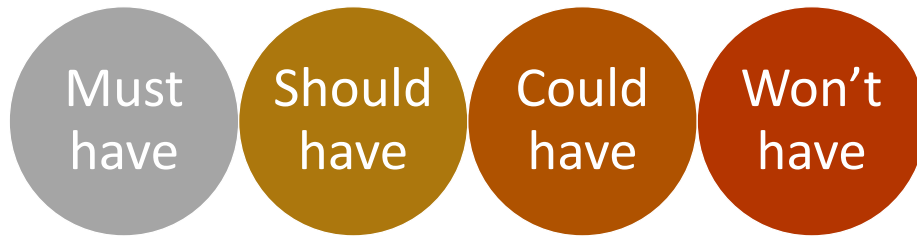- Resources are limited, and not all requirements can be implemented at once.

Techniques
- **MoSCoW Method**
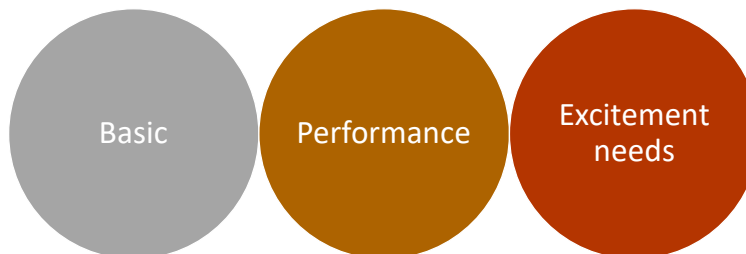- **Kano Model**
- **100-Point Method**

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Requirements Prioritization

MoSCoW Method

Must have	Should have	Could have	Won't have

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Requirements Prioritization

Kano Model

Basic	Performance	Excitement needs

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Tools for Requirements Management

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Benefits of Effective Requirements Prioritization

1. Improved Focus: Ensures the most important features are implemented first.
2. Better Resource Allocation: Allocates time and resources effectively.
3. Increased Stakeholder Satisfaction: Meets the highest-priority needs of users and clients.
4. Faster Delivery: Delivers critical features sooner.

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Common Challenges in Requirements Analysis

1. Incomplete Requirements: Missing information or unclarified needs.
2. Overloaded Stakeholders: Too many requirements from different sources.
3. Changing Requirements: Constant changes during the project lifecycle.
4. Communication Gaps: Lack of clear understanding between stakeholders and the development team.

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Strategies to Overcome Challenges

1. Continuous Stakeholder Engagement: Regular communication to manage expectations.
2. Clear Documentation: Maintain detailed and accurate records of requirements.
3. Change Management: Implement a process for handling changes effectively.
4. Prototyping: Use prototypes to clarify and validate requirements early.

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Best Practices for Requirements Analysis and Prioritization

1. Involve Stakeholders Early and Often: Regular feedback ensures alignment.
2. Use Structured Techniques: Leverage established prioritization methods.
3. Maintain Flexibility: Be ready to adapt priorities as the project evolves.
4. Document Everything: Detailed records help avoid misunderstandings.

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Conclusion

Requirements analysis and prioritization are essential for delivering successful systems.

Key Takeaways:

1. Effective analysis ensures the system aligns with user needs.
2. Prioritization helps manage resources and meet deadlines.
3. Regular review and clear communication are key to success.

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Thank You

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